

ABSTRACT OF THE DISCLOSURE

A digital transmitter converts a digital signal into analog form with a digital to analog converter (DAC) and uses an analog signal image produced from the DAC to provide an analog signal at a transmission frequency and/or uses a projected analog signal image to produce analog signals for transmission. Rather than removing analog signal images with a low pass filter at the output of the DAC and/or using analog signal images and analog mixers for frequency conversion, the digital transmitter uses the analog signal images from the DAC to produce the analog signals at the desired frequency/frequencies. By setting and/or adjusting the conversion rate for the DAC and/or the digital signal frequency/frequencies, the analog signal images produced from the DAC can be positioned in the desired frequency band(s). For example, the digital transmitter can position the digital signals within non-overlapping portions of a conversion bandwidth defined as one-half the conversion rate for the DAC. When the digital signals are converted into analog form, the DAC produces analog signal images periodically repeated at multiples of one-half the conversion rate such that analog signal images are produced at the appropriate frequency band(s) for amplification and transmission.

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